

**Weekly Bureau of Information for All Who Till the Soil or Are Interested in Making Homes**

## COMMON DISEASES OF NURSERY AND ORCHARD

Crown gall and hairy root are diseases of very great importance to both nurseryman and fruit grower. The fact that they are so very widely distributed throughout the world and that they attack such a very large number of species and varieties of plants, places them among the most important of the plant diseases. Although they are referred to as two diseases, they are in reality due to the same organism. The crown gall form was the first to attract the attention of the observers, but it was soon learned that hairy root was frequently associated with it.

The disease in one or both forms are now recognized as occurring on almond, apple, apricot, arbutus, alfalfa, blackberry, beet, cherry, chestnut, clover, corn, cotton, dewberry, English daisy, grape, hop, honeysuckle, marigold, margold, oleaner, peach, plum, prune, pear, potato, poplar, peony, raspberry, rose, radish, Shasta daisy, walnut, willow, and many other plants. On many of these plants it would be of very little importance were it not that they are so common to the nurseryman and to the fruit grower. On many plants it is quite serious, reducing their vitality and fruitfulness. In commerce, its greatest importance is on apples, peaches, plums, cherries, grapes, raspberries, blackberries and dewberries.

The disease is due to a bacterial organism living in the cells of the host plant, and stimulating them to excessive activity, which results in the formation of cancerous and hairy growths occurring at the crown, on the roots, trunk and branches of the affected plants. On herbaceous plants and cane fruits it usually causes the soft galls, which originate in the spring and are irregular in size, whitish and pumilion. During the latter part of the season they decay and slough off. The plant may survive the attack, but some of the roots will be killed and undergo a decay, permitting the entrance of other organisms of disease. On hard, woody plants the disease usually takes the form of hard galls. On apples and some other plants it may take the hairy root form, in which it produces a flat gall or callous growth with a great mass of hair-like roots.

Diseased trees will frequently grow, make a fine, healthy appearance and produce fruit, while in other cases the disease is without doubt the cause of reduced crops, dwarfed growths and frequently death. The disease is probably less serious on apple trees than on some other fruits. It appears to be more destructive on peaches than on apples. It is very destructive to bush berries, especially red raspberries, and in some parts of this country has caused this industry to be abandoned.

## HOG RAISING IS PROFITABLE

In the successful raising of swine there are problems, other than that of feeding, which often determine success or failure. The most important of these is the preservation of the health of the swine. Wherever a considerable number of animals are gathered together the risk from disease is considerably increased. Extra precautions must then be taken to guard against disease and to keep the animals in thrifty condition.

The first essential is that their quarters be kept clean and sanitary. In purchasing swine, care should be taken that they come from herds free from transmissible diseases, that they are healthy, and have not been exposed to disease in transit. Public stock yards are liable to be infected with hog cholera. It is dangerous to bring swine from such places and put them in a healthy breeding herd.

It is an excellent plan to have a quarantine pen some distance from all other swine, and so located that there is practically no danger of transmitting diseases to the herd. All recently purchased animals should be held in quarantine in such a pen for ten days, to be certain that they are free from disease, before placing them in a healthy herd. If a disease of swine occurs in the neighborhood, keep away from these farms and do not allow anyone who has been on an infected farm to visit your herd. If your swine have access to a stream of running water and disease appears on a farm located above yours, on the same stream, remove your hogs at once, as the infection is liable to be carried by the strong current, and buzzards, also, are liable to carry the infection of hog cholera and should be kept away if possible. Such measures are simple, but they are very important.

While a few swine can be raised confined in limited quarters, if such quarters are kept clean, they will do better, will keep in better health and can be



A Prize Winner.

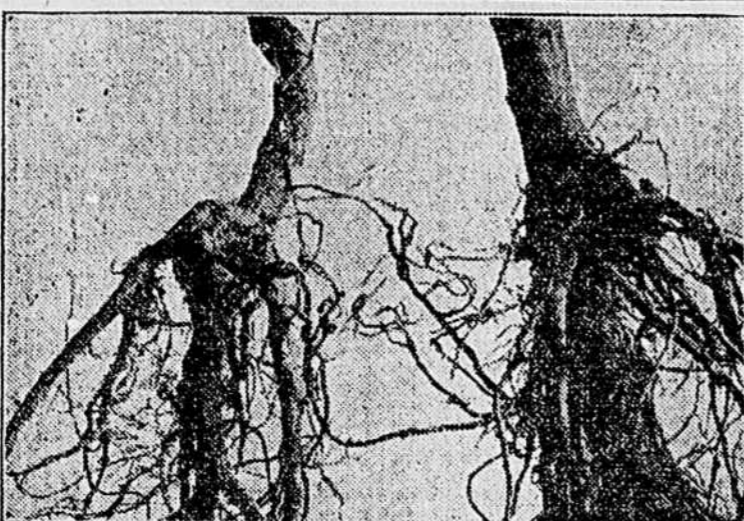
grown more cheaply if they have plenty of range for pasture. It is desirable to have the pasture fenced off into suitable areas so that the hogs can be shifted from one pasture to another, not only to provide fresh pasture, but also to afford an opportunity to disinfect the pastures, either by plowing and seeding to a forage crop or by exposure to sun and weather. Nearly all cases of intestinal worms, which are rather common in swine, are contracted from infected ground, and swine can be kept free from these parasites by frequent changes of pasture.

**Too Much Spraying May Be Injurious.** We have at different times had occasion to observe injuries to shade trees brought about by various causes, in many cases resulting from treatment applied by careless or ignorant persons. The present widespread treatment of different pests has made necessary the testing of many remedies, some of which have proved to be more injurious than the pests themselves. These materials have not only been used by careful people trained in the use of different methods for controlling insects and fungi, but by others who are reckless to the point of seeming to delight in taking chances. Many kinds of oils have been used for spraying insect pests, some of which have proved reliable and others

## AGRICULTURAL DEPARTMENT

All inquiries and communications addressed to The Times-Dispatch will receive prompt attention. This department will appear each Monday, and contributions or suggestions will be welcomed.

**Facts for Farmers, Stock Breeders, Poultry Raisers, Orchardists, Truckers and Gardeners—Queries and Answers**



Callous on the Left. Diseased Nursery Apple Stock. Crown Gall on the Right.

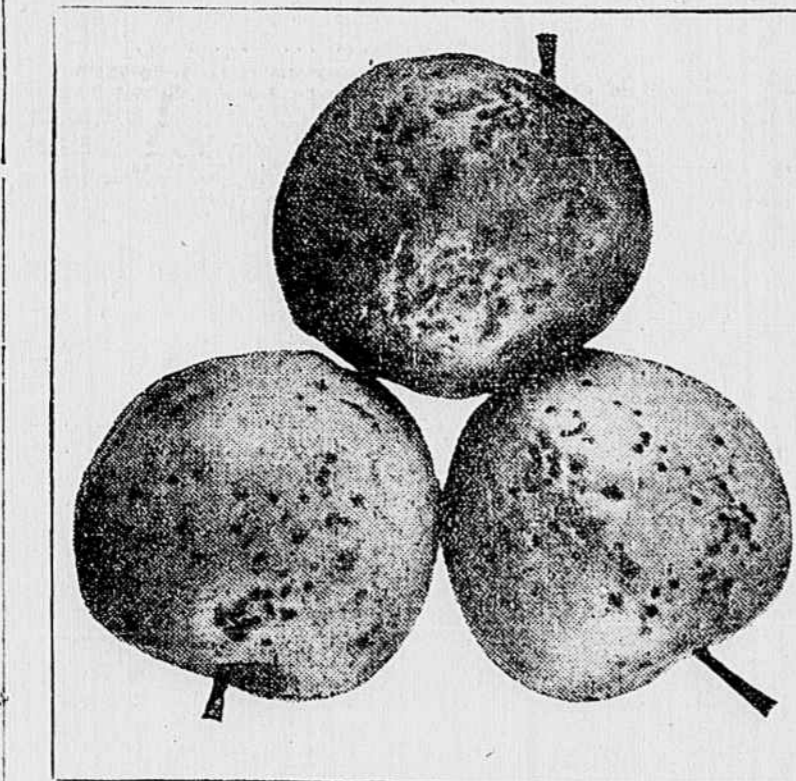
Injurious Kerosene oil can be used on some plants under certain conditions without causing injury, while in other cases it will kill them. We have seen quite a few shade trees killed by spraying with kerosene and water to exterminate woolly aphids: the oil soaked into the bark, reached the cambium and sapwood, destroying the tissue.

Gas oil, a heavy oil used in the manufacture of water gas is very injurious to trees when used as a spray. A few years ago several hundred shade trees were severely injured in one of the Eastern cities by spraying the trunks with this oil to kill clusters of gypsy moth eggs, it being used without any knowledge whatever of its adaptability to this purpose.

Ordinary house paint has sometimes been used on smooth-bark trees with great injury. Occasionally commercial oils used for spraying fruit trees for the San Jose scale cause local injury, and some shade trees have been known to be affected by their use.

Oils and other materials to keep down the dust in roadbeds are now much in use, and we have observed some injury from this source, when the trees were located close to the highway and the buttresses of the roots were exposed. Salt used on sidewalks, in gutters and trolley lines in winter has been known to injure the root systems of trees. Arsenate of soda, potassium cyanide and other chemicals are extremely poisonous to trees and will cause death.

**A Silo Thought.** The silo is becoming mighty popular in Virginia. It is well enough to be careful and thoughtful in building silos. Experience has shown that the best form for a silo is round, with the walls perpendicular. The round silo does away with corners, in which silage is likely to spoil. It gives the largest capacity for the amount of material in the walls, and where built above ground



Scab Developed in Storage.

this form of construction resists the winds and the pressure of silage from within better than the square silo.

When the silo exceeds sixteen feet in diameter it requires more work to get the silage to the door than in the smaller silo. It also requires a larger amount to be fed daily in order to keep the silage from spoiling on account of its contact with the air. A silo of large diameter and not very tall has more spoiled silage in it per ton of good silage than a silo of greater height. The pressure on the silage is measured by the height of the silo and not by its diameter, so that the tall, slim silo will hold practically as much silage per square foot of wall surface as the short, broad one. On account of this greater capacity of tall silos, it is seldom advisable to build one less than thirty feet in height. When built of masonry, or where well anchored and carefully looked after, they may economically be built higher, to give the needed capacity without getting the silo unduly large in diameter.

## Ravages of Insects.

According to the statements, after much research of the government experts, the farmers and fruit growers of this country are losing much money every year by reason of the ravages of insects. The government estimate is that \$1,000,000,000 a year is the loss. Think of it—a billion dollars lost each year by biting insects. The thing might be doubted, but for the figures that show the facts. The cotton growers are said to be losing \$50,000,000 a year by reason of the ravages of the boll weevil. And all because the quail and the prairie chicken, the natural enemies of that bug, are becoming scarce. The quail and the prairie chicken, and even tobacco, are being cut short, to a more or less extent, because farmers and farmers' boys keep on shooting them. The natural enemies of the natural enemies of the tobacco and the wheat and the corn. Will we ever grow wiser?

## A Word To City Folks.

Only those who have eaten strictly fresh eggs know how to fully appreciate them. Unfortunately indeed are any other than a stale product. The delight of having the very best upon the breakfast table is enough to encourage the industry.

## SCAB OFTEN DEVELOPS ON FRUIT IN STORAGE

Scab on apples is too familiar to need much description. It first appears as small, circular, olive-colored spots on the skin of the apple. These later enlarge, many of them becoming one-fourth of an inch or more in diameter, rounded, roughish and dark olive-colored, usually surrounded by a light gray border. Several spots may coalesce and form irregular patches, sometimes covering a large portion of the apple. In severe attacks, especially those resulting from early infection when the fruit is small, the apples often become cracked and badly distorted in shape, due to the unequal growth of the healthy and diseased portions.

While scab on the fruit is largely a superficial growth, the injury it does directly and indirectly is by no means confined to simple damaging of the appearance of the fruit. Epidemics of pink rot and some of the blue mold decay come from secondary infections of these fungi through scab spots. Scabby apples, in addition to being more likely to decay, wither more rapidly in storage than do perfect apples.

Apple scab fungus may attack the flowers, twigs, leaf-stalks, leaves and fruit, but it is upon the last two that its appearance is most prominent. While severe attacks on the leaves do much to weaken the trees, the direct monetary loss to the orchardist is greatest from the effects of fruit injury.

It is a matter of common experience that the lower leaves on the tree are the first to show attacks of scab. Hence, raking and burning the leaves would do much to lessen the danger of infection. The formation of winter spores takes place more readily when the leaves fall on soil or are partly covered by grass or other

leaves. Orchard cultivation produces conditions unfavorable to the propagation of scab spores and early plowing buries many of them, where they will decay and do no damage. From information by men who have made a study of this disease, it would seem that the appearance, growth and spread of apple scab in storage is by no means uncommon. Scab in storage may develop on fruit which, when placed in the cellar, appeared entirely free from the disease. Fruit from trees that are well sprayed with lime is less likely to develop the disease in storage. Scabby apples should be carefully sorted from the sound before storing. The temperature of storage should be as low as consistent with safety and not subject to abrupt changes. Very moist storage conditions should be avoided.

**Planting Strawberries.** Strawberry plants fail to grow more frequently from being set too deeply, than from any other cause. The crown should always be above the surface of the ground. A dibble is better than a trowel for planting. When the hole is made the long, fine roots should be placed in the hole, and the earth pressed very tightly about them. If there is danger of a dry time, water may be put in the dibble hole, and allowed to soak away before the plant is set in.

**Swat The Fly In Autumn.** Science has demonstrated without the shadow of a doubt that flies are disease carriers. That their feces carry millions of germs that may mean death to any one whose food or drink they come in contact with. It behooves us, therefore, to kill the fly or keep our food from his contamination.

## The Scratching Shed.

A good scratching shed is an important adjunct to the hen house and will pay for itself in one season in increased health and vigor of the flock. You will notice an increase in the egg yield. It is in this scratching shed that the fowls get their fresh air and exercise.

## The Natural Course.

Any permanent system of farming requires that the roughages produced on the farm be returned to the soil in order to properly maintain the fertility of the land. Live stock convert this into manure that aids in maintaining soil fertility and at the same time turn a market value for the feed consumed.

## BRIEF NOTES THOUGHT OUT BY THE WAYSIDE

Alfalfa with a fair chance, always makes good.

See that the celery gets plenty of moisture and good cultivation.

Last year the corn crop of Minnesota was estimated to be worth \$51,000,000.

Every foot higher than a man's head means a waste of lumber in the poultry house.

Style and finish count in the market value of draft horses as well as in coach or driving horses.

Crows are not always injurious. It is a well-known fact that at times they are of service in eating grubs and cut worms turned up by the plow.

The farmer's orchard is passing, not because it should, but because he doesn't care. Like the calf that ran off with the steer, he will miss his supper by and by.

Feeding skim milk to hogs, when properly done, is one of the most profitable branches of dairy farming.

It is very seldom that an orchard is cultivated too much. The fault is usually in the other direction.

The horse worked hard every day needs the best treatment one can give. The first and most important point in feeding, is to have the right kind of feed and to feed in the right way.

Even in the present undeveloped state of the industry, the poultry products of the United States bring in a larger revenue than any farm crop except corn.

It is not a good policy to wait for the good things to come to us. Better go out and look for them.

There are opportunities of great usefulness in horticultural life. No field is more inviting and no theme offers greater encouragement to the real student—the honest student. There is nothing in store for the faker.

It is a good plan to provide plenty of nests for the hens to lay in. When there are not sufficient, hens are apt to quarrel and fight for their possession, and in the scuffle eggs are broken, which are then eaten by the hen, causing the egg-eating habit to be formed.

## GENERAL INFORMATION THROUGH QUESTION BOX

**In Time of Peace Prepare for War.** To G. L. L. Hall, County: In reply to your question, it may be said in a general way that the principal insects affecting the tobacco plant are the cut worms, horn or tobacco worms, and the grasshoppers. Late fall plowing is one of the most simple means for reducing the numbers of cut worms and tobacco worms especially.

**Fruit Planting.** To R. E. L. G. Fluvanna County: Do not plant seed of grafted fruit. If you do you will make an egregious mistake. It is not likely to grow to any advantage. Always plant the natural fruit whole, or the seed as soon as taken from the fruit, the apple, for instance. The dried seed are not likely to sprout.

**As to the Use of Lime.** To F. S. T. Fluvanna County: Your question is too long and too "numerous," so I will not be answered in this contracted column, but in a general way, I may say that all our soils are benefited by the application of lime. Cold soils are made warmer and the soils are more fertile. Soggy soils, after being underdrained, can be made friable and sweet by applying lime.

**Cottonseed Meal.** W. R. G. Tazewell County: "Please tell me in a nutshell about the uses and value of cottonseed meal that I am hearing so much about." In a nutshell, may be said cottonseed meal has become very valuable in a few years a common feed for supplementing corn in live stock feeding. Its use is due to the well-known deficiency of protein in corn which can be supplied by the excess of protein in cottonseed.

**Chickens Versus Ducks.** Mrs. C. B. S. Chesterfield County: Ducks are rather hard to raise, and are not especially valuable in Virginia after they are raised. But, in answer to your question, young ducks must have mash food entirely, equal parts of ground oats, bran and cornmeal, and sharp, fine grit and coarse sand. Mix well and use with an equal quantity of finely-chopped green stuff. Chickens are much easier raised, and bring more money in the Virginia markets, when ready for sale markets. Drop ducks and stick to chickens.

**An Absurdity.** T. L. E. Alleghany County: "Will you please give me the names and addresses of seed dealers and manufacturers of farm machinery. I would like to have a list covering all the States." The absurdity of the above proposition is manifest on its face, and, therefore, an answer is not necessary, except to say that the advertising columns may furnish more or less information.

The Old Virginia Drink.

Buttermilk is a healthful drink. There is no better hot weather drink. This does not mean that it is not a good cold weather drink. It is a good deal more easily digested than sweet milk. It contains less fat, and that is an advantage. The albumens are changed in such a way that the stomach can handle them more easily than it can the albumens of sweet milk. The acids are pleasing to the taste and helpful also.

**Care of The Colt.** Most colts have a hard time the first winter of their lives. In many cases they are not given the proper rations and are confined too closely. In such cases growth all but ceases, and the colts may be permanently injured. Watch them carefully the first winter, for it is the most important period of their lives. They have just been weaned and it isn't easy for them to adapt their small systems to dry feed.

Oats make the best concentrated feed for young horses. If you have to use a substitute, see that it is high in protein, for the animals need plenty of material for growth. Up to one year of age, two to three pounds of oats or just a little less than they will eat up clean, is a fair ration. Feed the amount of hay they will eat up clean. It is not a good idea to let the colts "stuff themselves" with roughage, for they will not make the best growth with such treatment.

See that the colts get plenty of sunshine. If they are kept in a lot where they do not get enough sunshine, they will become stunted. The general things you should do to care for young colts properly are these: Provide sufficient grain and not too much hay, see that they are kept in good quarters and be sure the colts get plenty of exercise and sunshine. Then, of course, always handle the colts carefully, and teach them you are their friend.

**THE COTTON MARKET** NEW ORLEANS, October 11.—Weakness prevailed in the cotton market all last week, liquidation trading forcing the price of January well down to the 7-cent level, while spots lost more than half a cent a pound, middling closing at 7 1/4 cents.

The underlying cause of the decline was the freer offerings of spot cotton in the interior. For cotton for the week were \$7,811 bales, bringing the grand total this season to 227,443 bales. There was continued liquidation in futures and many traders considered the market was in shape to resume business at almost any time.

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